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Cancer Therapy

Bev Levene^{*}
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From the start of early civilization, dog has been man's best friend. In recent years man's interest and ability in medical fields of technology have greatly evolved. Along with this technology canine lifespans have increased. Subsequently diseases of older dogs such as cancer have become more prominent. Pets are now thought of as members of the family and because there are more options available, owners are demanding that their animals receive the best care possible. Because of these developments, the field of oncology is becoming vastly more important in small animal medicine.

Few veterinary schools in the United States have board certified oncologists. Here at Iowa State University College of Veterinary Medicine, we do not have a board certified oncologist, but we do have internal medicine clinicians and residents who are genuinely interested in the field. One such individual is Dr. Phil Ries, a resident in internal medicine. Dr. Ries graduated with his DVM from Ohio State University in 1988 and then did an internship for 1 year in West Los Angeles Veterinary Medicine Group. After completing his internship, he practiced for an additional year in southern California. He then came to Iowa State to do a residency in internal medicine.

Dr. Ries' interest in oncology stems in part from wanting to become competent in an area in which he felt ignorant. It is also based on the fact that at the Ohio State Teaching Hospital the referral case load in oncology is quite large. In spite of the large case load, Dr. Ries feels that most of what he has learned about cancer in animals he has had to learn from veterinary literature and more recently his colleagues at ISU Vet Teaching Hospital.

At this time at Iowa State, however, the case load is moderate. This may be in part due to the lack of a board certified oncologist. Of the cases that do come into the teaching hospital, Dr. Ries

deals with many of them. The only major treatment that he is unable to provide to clients is radiation therapy. These cases are referred schools which are able to dispense such treatment.

Cancer comes in a wide variety of forms and may be treated in a number of ways. Surgery is a method available to all practitioners, provided the procedure is not too involved. Another method of treatment is radiation therapy in which special equipment and appropriate licensing is required. Chemotherapy is a form of treatment that is most often thought of when people think of cancer. As in people, this may be used in animals. Hyperthermia and immunotherapy are also being used in the handling of various types of cancer. These therapies do not have to be used alone. In fact, they are often used in combination, i.e., surgery will often be followed by chemotherapy or radiation therapy. As with surgery, private practitioners should be able to provide chemotherapy, but the cost of equipment for radiation therapy makes it prohibitive.

At the Iowa State University Teaching Hospital the most frequently diagnosed tumor is lymphosarcoma. This occurs in both dogs and cats. Other frequently diagnosed tumors include mammary tumors, mast cell tumors, and nasal tumors.

In the case of lymphosarcoma, an owner will generally bring in an animal because of sudden anorexia and lethargy. They may also have noticed lumps under the jaw or along the neck. In many cases these lumps are found by the referring veterinarian on a routine exam or when the animal is brought in for another, unrelated problem. Often by the time they are seen at the teaching hospital by Dr. Ries, the disease is advanced, and the tumor may have metastasized to multiple organs.

Dr. Ries related his typical chemotherapy protocol for a lymphosarcoma case. He prefers to use a combination therapy, although a single drug therapy exists. He uses a combination of Cytoxan, Vincristine and prednisone until the tumor is no longer clinically apparent. Once the tumor is clinically in remission he uses the same doses but decreases the frequency of administration. In the maintenance period, he replaces Cytoxan, an alkylating agent, with Chlorambucil which is less

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myelosuppressive. At home, the owner is expected to give the animal Chlorambucil for four days every other week and prednisone every other day. The owner is also instructed to watch for signs that may signal a relapse.

According to Dr. Ries, for the 70 to 80 percent that go into remission, it can last for two weeks to two years. In his experience, the average initial remission lasts for about one year. Before an animal is considered to be in remission, he/she must be free of clinical signs of the tumor. This is assessed by a thorough physical exam on every visit. If a tumor relapses, Dr. Ries then generally will try an alternative chemotherapy protocol. He often uses adriamycin, which is a broad spectrum antibiotic antitumor. Generally the second remission is shorter than the first.

When an animal is put on chemotherapy drugs it is very important to explain the possible side effects to the owners. According to Dr. Ries, clients tend to be well informed on the side effects of chemotherapy drugs on humans, and they do not want their pets to become more miserable secondary to the treatment. Dogs and cats, as compared to humans, have less severe side effects to the drugs used. Most of the drugs work on

rapidly dividing cells, such as those found in the bone marrow, GI tract, and those responsible for hair growth. But unlike humans, hair loss, severe nausea and GI upset, and bone marrow suppression tend to be mild to moderate in most cases.

Vincristine, for example, causes little or no gastrointestinal upset. If an animal is experiencing gastrointestinal problems a change in diet may alleviate the symptoms. Generally, however, the diet, as long as it is balanced, is not changed. The tumor usually has little effect on the nutritional status of the dog once it is in remission.

The cost of treatment, such as the one mentioned above, varies with the size of the animal. Dr. Ries quoted a price of about \$750 for a year of combination treatment. This price was based on a forty pound dog with lymphosarcoma. The price includes induction, maintenance, check ups, and lab tests.

Dr. Ries feels that the future of the field of oncology is huge and will only keep growing. New therapies are being found and tried, some with success. A real need exists for board certified oncologists and oncology specialties at the referral institutions.



Sarah Lutz